In the Claims:

Please amend the claims as follows:

1-41 (cancelled)

42. (currently amended) A high voltage AC transmission cable system for transmitting power between two points each connected to one or more power networks, comprising:

at least one AC transmission cable;

at least one transformer with variable voltage transformation arranged in shunt connection at each end of the at least one AC transmission cable;

a voltage control member operatively connected to the at least one ~~said~~ transformer and operative to control said transformers in a coordinated manner to regulate an operating voltage of said AC transmission cable ~~operate the transformer at a voltage~~ whereby losses due to reactive power transport are minimize; and

at least one tap-changer operatively connected to the voltage control member and to one of said transformers to vary the voltage transformation of the transformer according to said operating voltage.

43. (currently amended) The system according to claim 42, ~~further comprising: a~~ wherein the voltage control member is operative to operate said system at an optimal voltage dependent on a surge impedance of the cable and an instantaneous power level.

44. (currently amended) The system according to claim 42, ~~further comprising: a~~ wherein the voltage control member is operative to operate said system at an optimal voltage dependent on an instantaneous power level equal to a Natural Load of the cable.

45. (currently amended) The system according to claim 42, ~~further comprising: a~~ wherein the voltage control member is operative to operate said system at a voltage whereby a sum of resistive losses, dielectric losses and charging losses are minimized.

46. (currently amended) The system according to claim 42, wherein the voltage control member is arranged for communication with control equipment at both ends of said AC transmission cable.

47. (currently amended) The system according to claim 42, wherein the voltage control member is arranged with control instructions for operation of said AC transmission cable under thermal overload conditions during limited periods of time.

48. (previously presented) The system according to claim 42, wherein the at least one transformer is arranged to operate with a wide ratio of input voltage to output voltage of between 1: 1 to 1: 2, or greater.

49. (cancelled)

50. (previously presented) The system according to claim 42, wherein the voltage

control member comprises a power electronic device which may be any of the list of: IGBT, IGCT, GTO, Thyristor, Diode.

51. (previously presented) The system according to claim 42, wherein the voltage control member comprises a mechanical tap-changer.

52. (previously presented) The system according to claim 51, wherein the tap-changer comprises a phase-shifting tap changer.

53. (previously presented) The system according to claim 42, wherein the voltage control member is comprised in an autotransformer.

54. (previously presented) The system according to claim 42, wherein the voltage control member is an autotransformer.

55. (previously presented) The system according to claim 42, wherein the at least one transformer is arranged to limit short-circuit currents.

56. (previously presented) The system according to claim 42, wherein the system is equipped with a high frequency filter.

57. (previously presented) The system according to claim 42, wherein transformer windings of the at least one transformer comprise at least one transformer winding arranged for a

fast short-circuit of a part of the transformer windings.

58. (previously presented) The system according to claim 42, further comprising:

one or more parallel cables for each phase, wherein each cable is arranged for rapid disconnect and reconnect.

59. (previously presented) The system according to claim 58, further comprising:

one or more breakers arranged for rapid disconnect and reconnect.

60. (previously presented) The system according to claim 58, further comprising:

one or more tap changer by-pass connectors.

61. (previously presented) The system according to claim 42, wherein the at least one AC transmission cable comprise an oil and paper insulated cable.

62. (previously presented) The system according to claim 42, wherein the at least one AC transmission cable comprises an XLPE insulated cable.

63. (previously presented) The system according to claim 42, further comprising:

one or more over-voltage protection devices, phase-to-phase, phase-to-earth, depending on the cable.

64. (previously presented) The system according to claim 42, further comprising:

one or more elements operative to protect a sheath of the at least one cable from overvoltage.

65. (previously presented) The system according to claim 42, further comprising:

a cable system shield comprising transposings and sheath sectionalizing insulators reducing shield induced currents.

66. (previously presented) The system according to claim 42, wherein one end of the transmission cable may be connected to one or more electrical machines isolated from the rest of the system.

67. (previously presented) The system according to claim 66, wherein one of the at least one transformer arranged nearest the one or more electrical machines has a fixed transformation ratio or is equipped with off-load tap-changers only.

68. (previously presented) The system according to claim 66, wherein voltage regulation of the one or more electrical machines is controlled according to natural load and minimize losses principle applied to a tap changer.

69. (currently amended) A method to control a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks, the method comprising:

arranging at least one transformer with variable voltage transformation in shunt-

connection ~~arranged~~ at each end of an AC transmission cable; ~~and~~

controlling said transformers in a coordinated manner to regulate an operating voltage of said AC transmission cable, whereby losses due to reactive power transport are minimized, wherein said operating ~~the cable with a variable~~ voltage ~~that~~ may differ from a voltage of said one or more power networks; and

arranging at least one tap-changer to vary the voltage transformation of one of said transformers according to said operating voltage.

70. (previously presented) The method according to claim 69, further comprising:

regulating the voltage dependant on a function of a natural load of said AC transmission cable, and thereby controlling a level of reactive power transported into any of said one or more power networks.

71. (previously presented) The method according to claim 70, wherein the voltage is regulated dependent on the natural load, whereby losses at due to resistive, dielectric effects are minimized.

72. (previously presented) The method according to claim 71, wherein the voltage is regulated under no-load conditions such that losses are reduced while maintaining voltage above a lower, minimum voltage level depending on system conditions.

73. (previously presented) The method according to claim 71, wherein the voltage is regulated under low load conditions such that losses are reduced while maintaining voltage

above a lower, minimum voltage level depending on system conditions.

74. (currently amended) The method according to claim 69, further comprising:

regulating the voltage dependent in part on an equation of the form:

$$\cancel{V = \sqrt{Z \cdot P_{actual}}}$$

$$\underline{V = \sqrt{Z_v \cdot P_{actual}}}$$

where V is voltage, Zv is the real part of the surge impedance and Pactual is the present active power flow.

75. (previously presented) The method according to claim 69, further comprising:

regulating the voltage dependent on thermal overload limits for the transmission cable during limited periods of time.

76. (previously presented) The method according to claim 69, further comprising:

rapidly reconnecting and disconnecting supply to and from at least two transmission cables.

77. (previously presented) The method according to claim 69, further comprising:

regulating the voltage with more than one transformer that are operated synchronously with each other.

78. (currently amended) The method according to claim 69, further comprising:

utilizing the ~~Use of a~~ high voltage AC transmission cable system ~~for transmitting power~~

~~between two points according to claim 42~~ as a power feeder for large, densely populated urban or suburban areas.

79. (currently amended) The method according to claim 69, further comprising:

utilizing the ~~Use of a~~ high voltage AC transmission cable system for transmitting power over a distance, wherein ~~between two points according to claim 42 in which~~ a part of the distance is across water.

80. (currently amended) The method according to claim 69, further comprising:

utilizing the ~~Use of a~~ high voltage AC transmission cable system for transmitting power between two points ~~according to claim 42~~ wherein one point comprises one or more electrical machines isolated from an electrical power network.

81. (currently amended) The ~~A~~ system according to claim 42, further comprising:

a ~~for communication and control for a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks wherein~~ high speed data communication member connected to at least one of said transformers ~~members are arranged~~ for communication with control ~~equipment for at least one transformer arranged at at least one end of an AC transmission cable~~ voltage control member.

82. (currently amended) The system according to claim 42, further comprising:

a ~~A~~ graphical user interface ~~for controlling a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks, wherein at~~

~~least one transformer is arranged at each end of an AC transmission cable, the interface comprising:~~ comprising at least one object oriented application for presenting data, parameter values and control actions for operating parameters of the AC transmission cable system ~~and/or a control system for at least one transformer~~.

83. (currently amended) A high voltage AC transmission cable system for transmitting power between two points each connected to one or more power networks ~~wherein at least one transformer is arranged at each end of an AC transmission cable~~, the system comprising:

at least one said transformer with variable voltage transformation arranged in shunt connection at each end of the AC transmission cable; ~~and~~

a voltage control member operatively connected to said transformers and operative to control said transformers in a coordinated manner to regulate an operating voltage of said AC transmission cable ~~operate the at least one transformer at a voltage~~ dependent on the surge impedance of the cable whereby losses due to reactive power transport are minimized; and

at least one tap-changer operatively connected to the voltage control member and to one of said transformers to vary a voltage transformation of the voltage transformer according to said operating voltage.

84. (previously presented) The system according to claim 83, ~~further comprising: a~~ wherein the voltage control member is operative to operate said system at an optimal voltage dependent on the surge impedance of the cable and the instantaneous power level.

85. (previously presented) The system according to claim 83, ~~further comprising: a~~

wherein the voltage control member is operative to operate said system, at an optimal voltage dependent on an instantaneous power level equal to the Natural Load of the cable.

86. (previously presented) The system according to claim 83, ~~further comprising: a~~ wherein the voltage control member is operative to operate said system at a voltage whereby the sum of the resistive losses, dielectric losses and charging losses are minimized.

87. (currently amended) The system according to claim 83, wherein the voltage control member is arranged for communication with control equipment at both ends of said AC transmission cable.

88. (currently amended) The system according to claim 83, wherein the voltage control member is arranged with control instructions for operation of said AC transmission cable under thermal overload conditions during limited periods of time.

89. (previously presented) The system according to claim 83, further comprising:

a cable system shield comprising transposings and sheath sectionalizing insulators reducing shield induced currents.

90. (previously presented) The system according to claim 83, wherein one end of the transmission cable may be connected to one or more electrical machines isolated from the rest of the system.

91. (previously presented) The system according to claim 90, wherein one of the at least one transformer arranged nearest the one or more electrical machines has a fixed transformation ratio or is equipped with off-load tap-changers only.

92. (currently amended) A method to control a high voltage AC transmission cable system for transmitting power between two points connected to one or more power networks, the method comprising:

arranging at least one transformer with variable voltage transformation in shunt-connection ~~arranged~~ at each end of an AC transmission cable; ~~and~~

controlling said transformers in a coordinated manner to regulate an operating voltage of said AC transmission cable ~~operating the cable with a variable voltage~~ dependent on a surge of impedance of the transmission cable, ~~which~~ where said operating voltage may differ from a voltage of said one or more power networks; and

arranging at least one tap-changer to vary the voltage transformation of one of said transformers according to said operating voltage.

93. (previously presented) The method according to claim 92, further comprising:

regulating the voltage dependant on a function of a natural load of said AC transmission cable, and thereby controlling a level of reactive power transported into any of said one or more power networks.